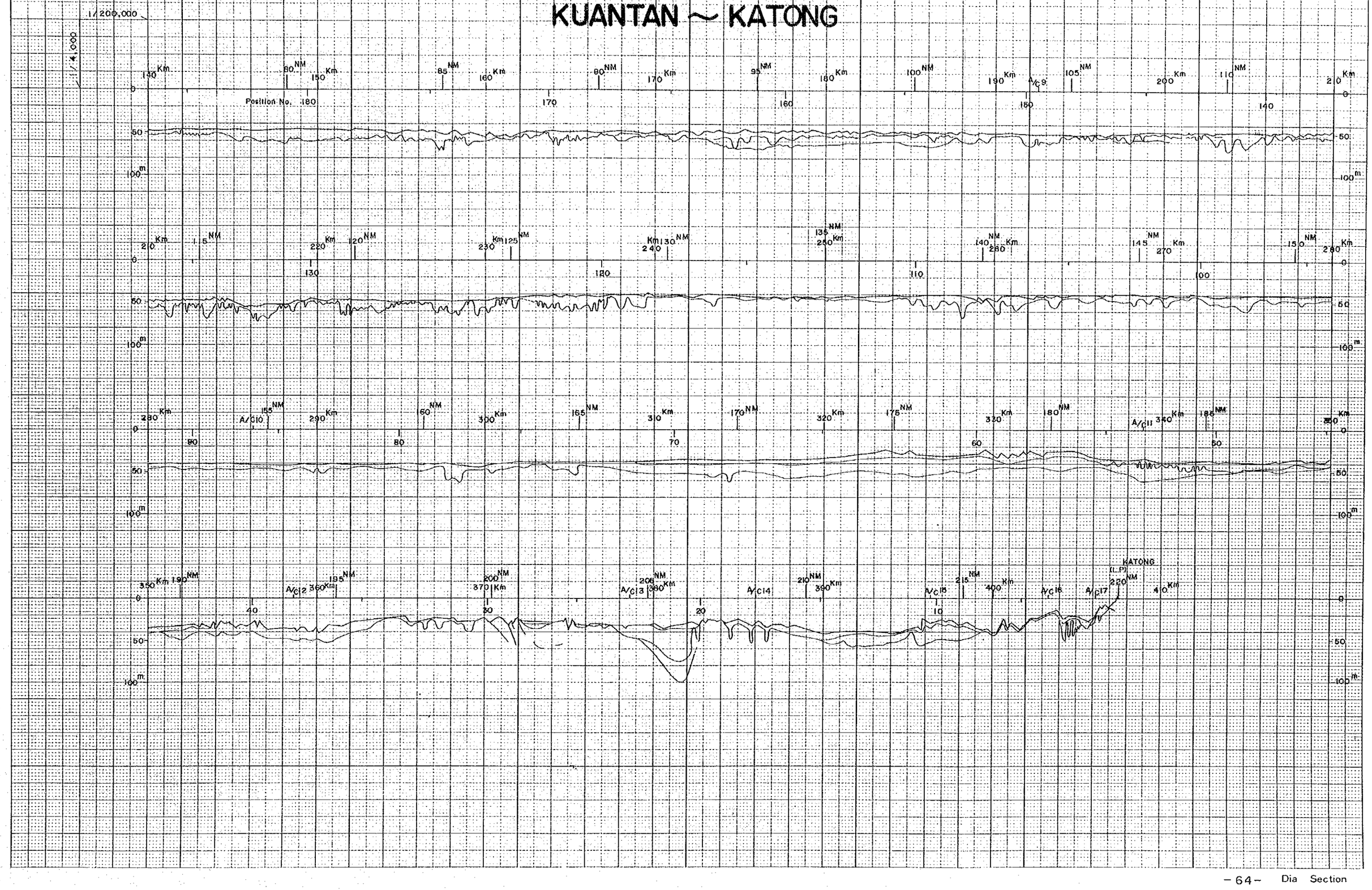
Fig.3.5.2(e) BOTTOM AND SUB-BOTTOM PROFILES

KUANTAN ~ KATONG



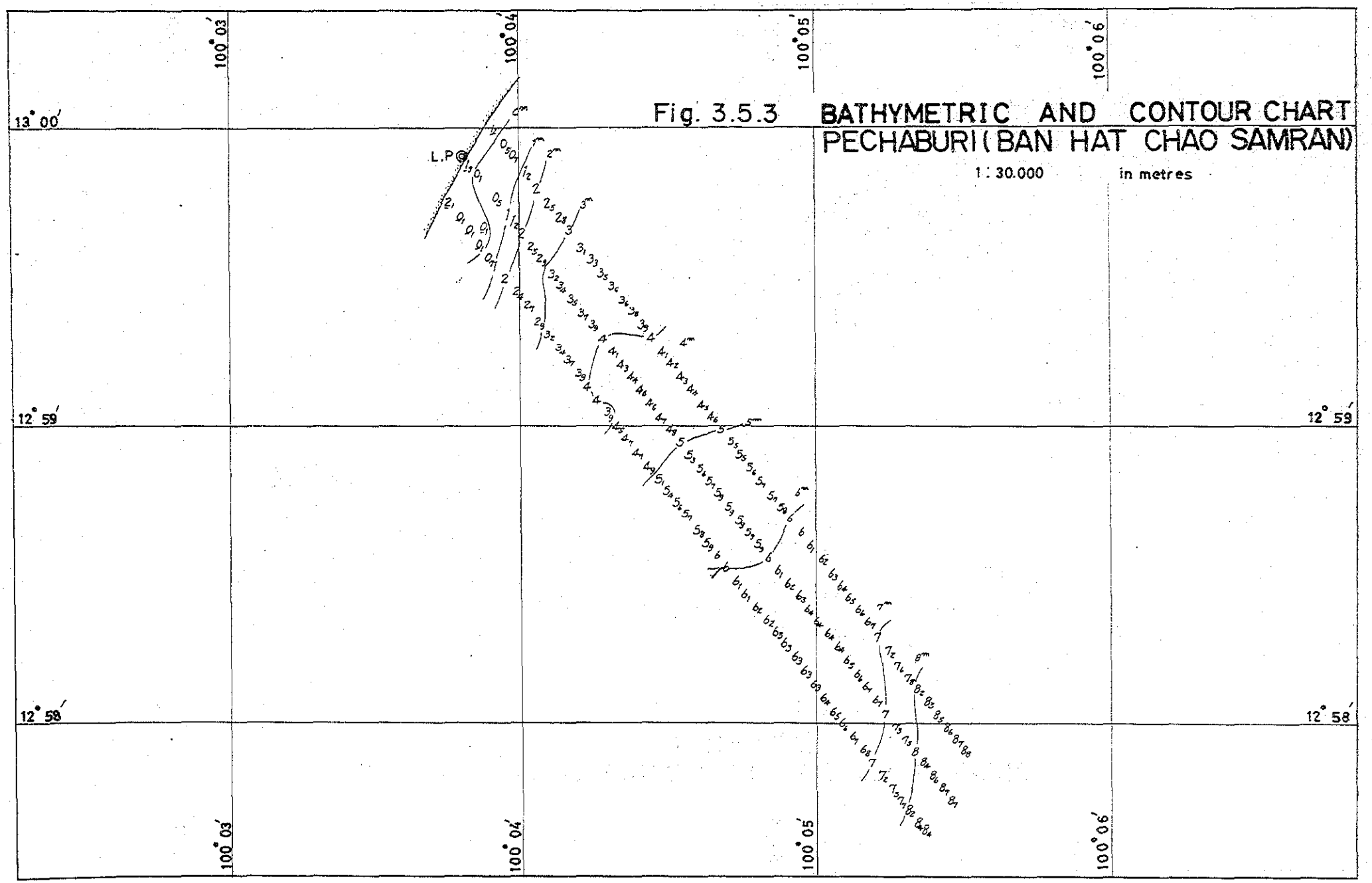


Fig. 3.5.3 BATHYMETRIC AND CONTOUR CHART
PECHABURI (BAN HAT CHAO SAMRAN)
1 : 30.000 in metres
L.P.
13° 00'
12° 59'
12° 58'
100° 03'
100° 04'
100° 05'
100° 06'

Fig. 3.5.4 BATHYMETRIC AND CONTOUR CHART (KUANTAN)

1 : 30.000 in metres

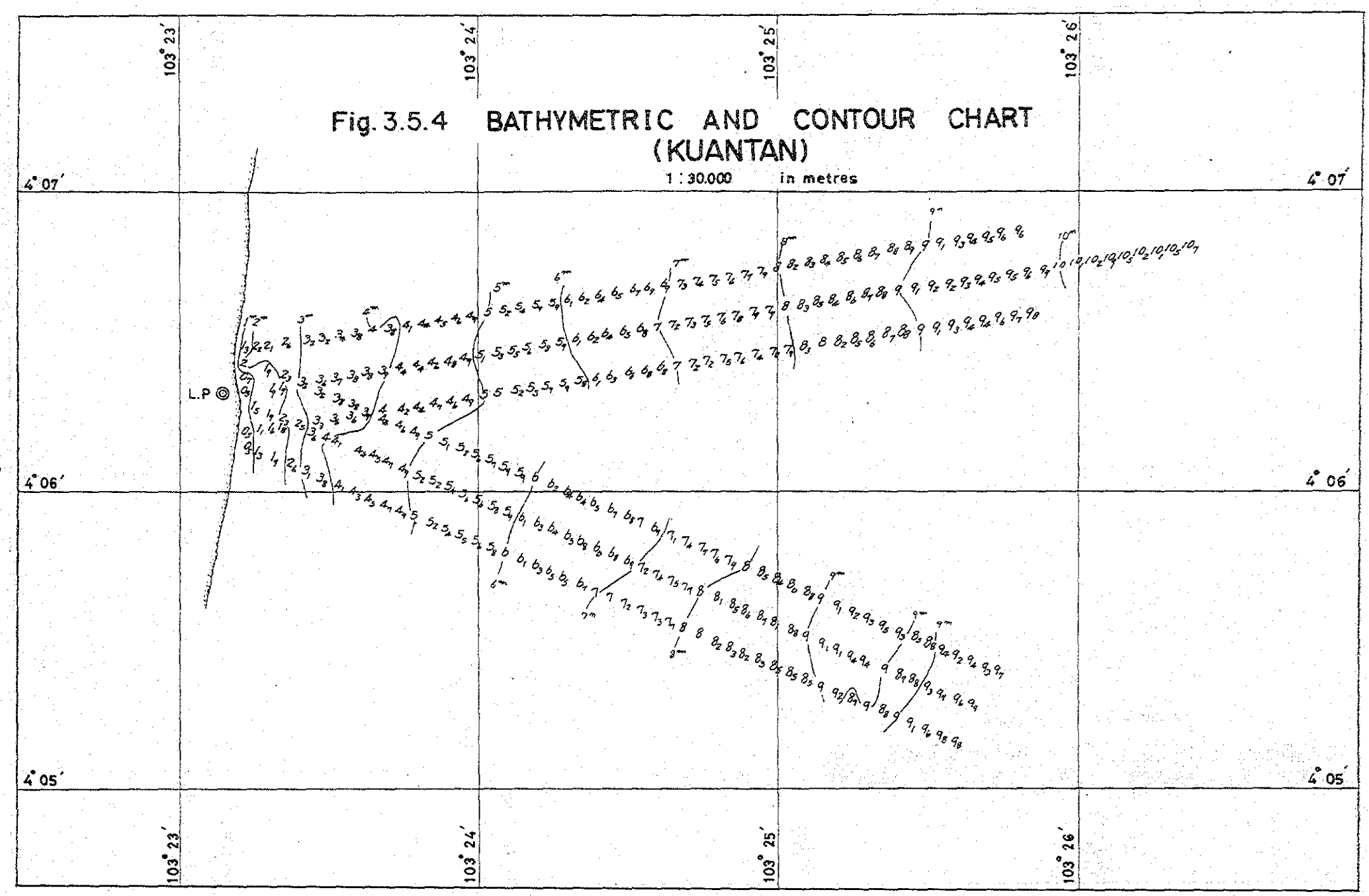


Fig. 3.5.5 BATHYMETRIC AND CONTOUR CHART (KATONG)

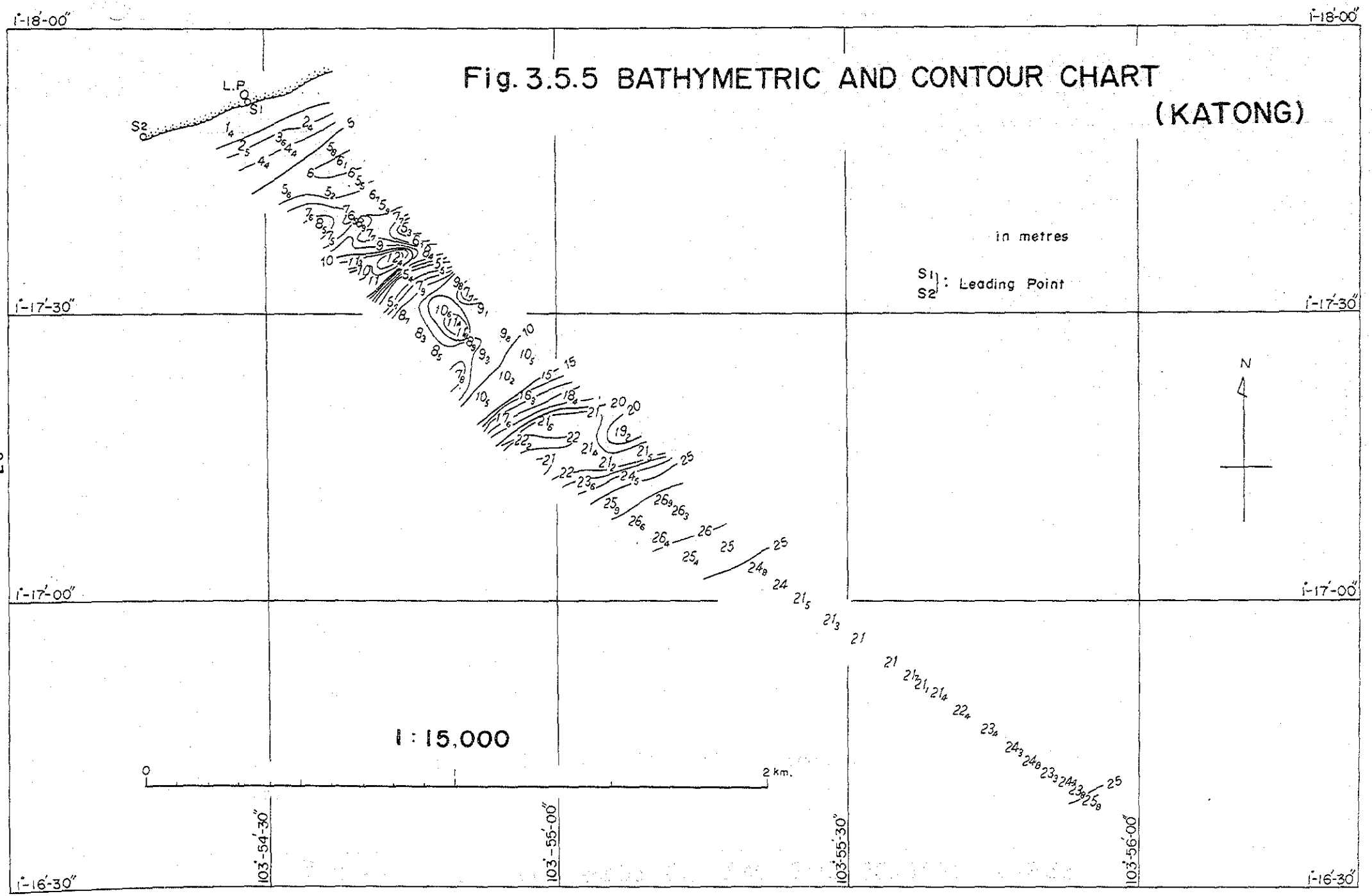


Fig.3.5.6 BOTTOM PROFILE AND SUB-BOTTOM LAYERS

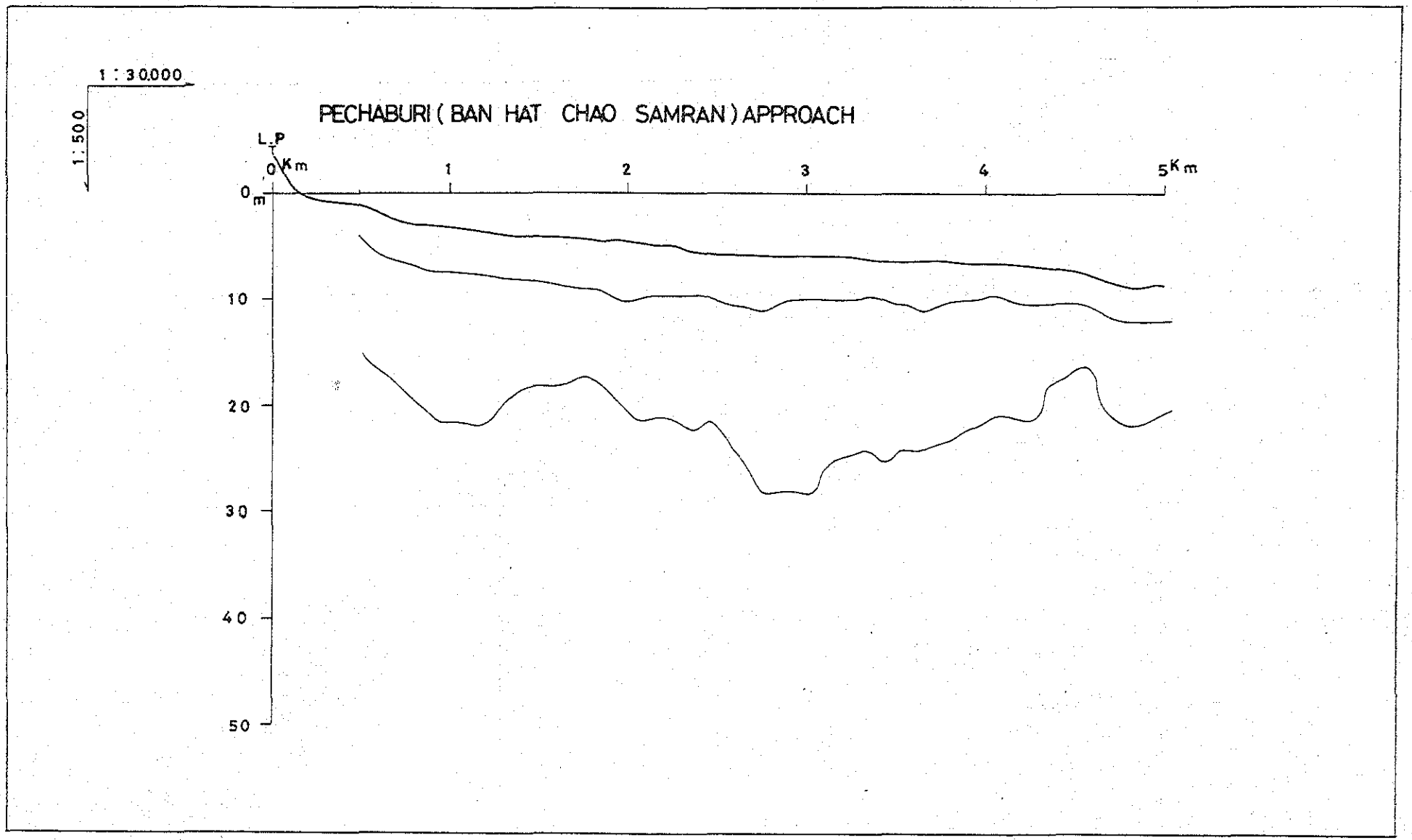


Fig.3.5.7 BOTTOM PROFILE AND SUB-BOTTOM LAYERS

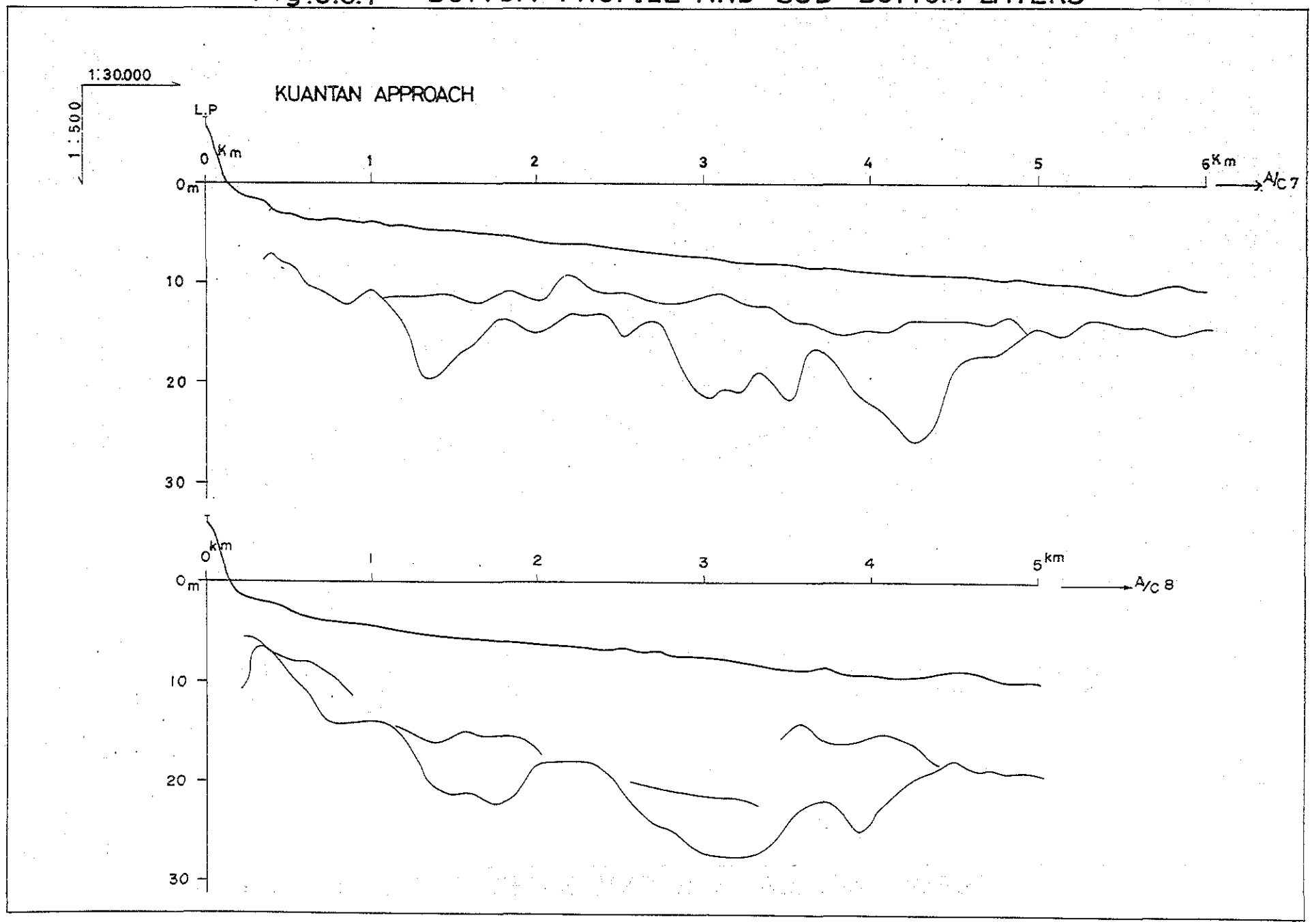
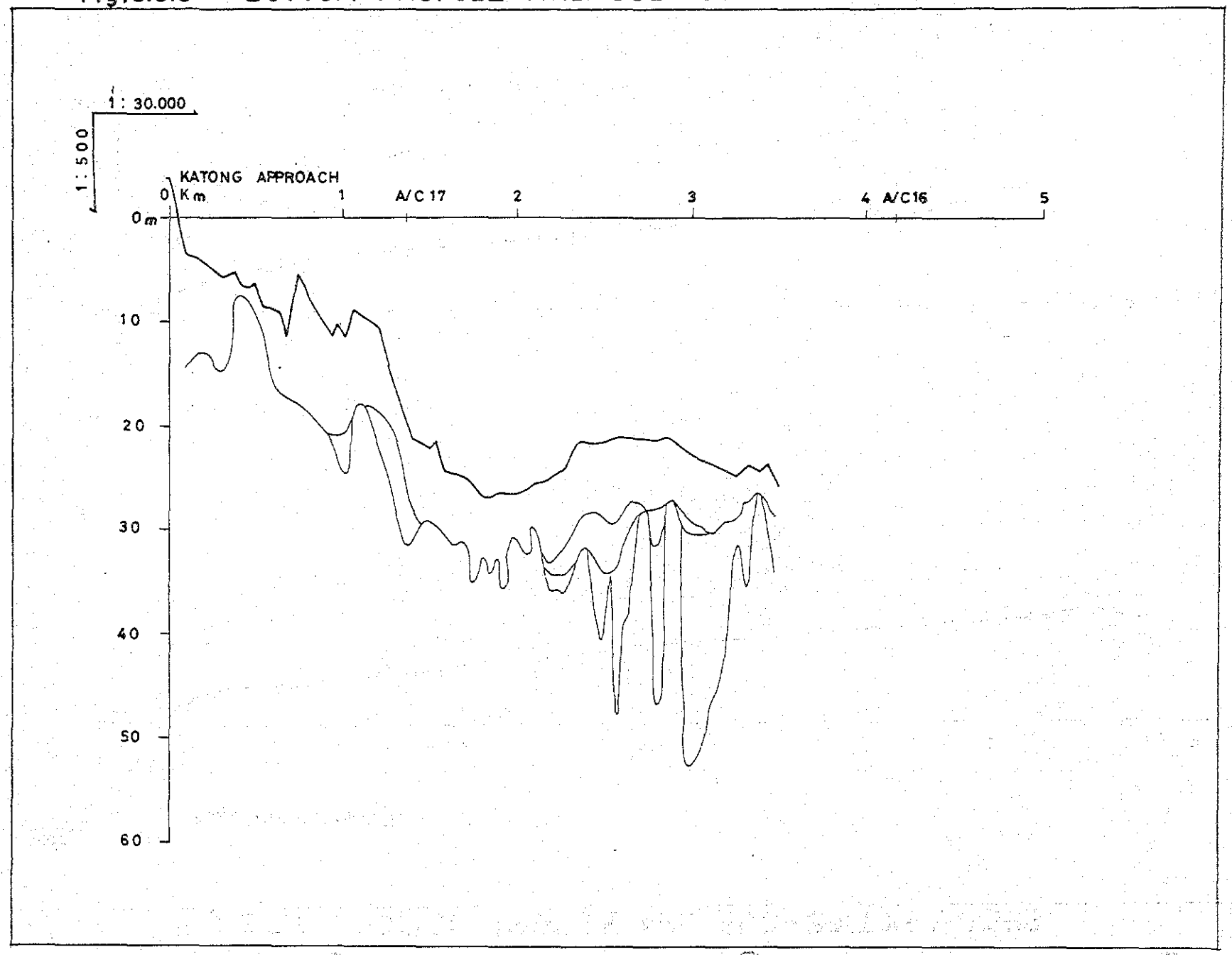


Fig.3.5.8 BOTTOM PROFILE AND SUB-BOTTOM LAYERS



3.5.3 Bottom Surface Conditions

Bottom surface observation in this survey was conducted by using the side scan sonar mentioned. The observation width was made 125m on both side of the "fish."

In effecting bottom surface observation, the survey area was divided into the following 8 sections.

(a) Pechaburi slope (landing point to Pos. No. 788)

This section was still divided by bottom condition into the portion ranging from the landing point to 5km off and the further portion. The recording of the side scan sonar shows that the former portion involved light-shade patterns depending on the strength of partially reflected sonic waves. This can be ascribable to the presence of different bottom materials, that is, the concentration of sediments containing particles more coarse than surrounding bottom material particles and/or shells. In the portion further than 2.7nm (5km), three small depressions (0.5m∿1.5m in depth and 10∿30m in width) were observed per kilometer on the bottom which was nearly flat. Trawler's trace was also observed, particularly in the area between points 829 and 788. (See Figure 3.5.9(a).)

(b) Flat section in the Gulf of Thailand (Pos. Nos. 788 and 696)

In this section a large number of remarkable ups and downs were observed. This section was still divided by the condition of ups and downs into 3 portions: (1) between points 788 and 778, (2) between 778 and 728, and (3) 728 and 696. In portion (1), the bottom forms gentle rises and falls with small depressions (5m in diameter and 0.5 to 1 m in depth) spread at a rate of 1∿5 depressions per kilometer. In portion (2), number of convex shapes appear as shown in Figure 3.5.9(b). These convex portions are 20m to 1000m in length and 1m∿8m in height. Some of them have recessed tops. These convex shapes lie with their longitudinal axes being oriented nearly in the northwest-southeast direction. In portion (3), ups and downs become more gentle than in portion (2) but with increased number of depressing (5m in width and 15m∿20m in length). The longitudinal axes of these depressions are oriented in the northwest-southeast direction as in the case of convex shapes in portion (2).

(c) Offing of Samui Island (Pos. Nos. 696 and 620)

This section is characterized by its deppressions of irregular shapes and numbers of traces by trawlers. (See Figure 3.5.9(c).) These depresses wave observed between points 649 and 620 and some typical measured large depressions 50m x 25m and about 1m in depth. In some areas, these depressions were oriented to a certain direction, which may be related to the direction of tidal current.

Traces on the bottom ran to all directions and were comparatively marked but their depths were not obtained. These traces often ran in parallel at typical intervals of 20m∿25m.

(d) Thailand-Malaysia flat section (Pos. Nos. 620 and 317)

This section involves more depressions in some portions and less depression in others and is on the whole flat as compared with the preceding section (c). These depressions were in various types: Some of them were spread and others concentrated. Those spread were comparatively large and usually measured 10m x 20m and less than 1m in depth and those concentrated were smaller and usually measured 5m x 5m with less depths. Traces observed on the bottom were as many and as clear as in the preceding section (c), as shown in Figure 3.5.9(d).

(e) Kuantan slope (Pos. Nos. 317 and 245)

In this section, the bottom surface was comparatively flat and scarecely involved depressions or traces by fishing gears. However, light-and-shade pattern were often observed on the bottom as on the Pechaburi slope. (See Figure 3.5.9 (e).)

(f) Offing of southeast coast of Malaysia (Pos. Nos. 245 and 43)

This section was still divided by bottom condition

into two portions: Portion (1) between points 245 and 64 and portion (2) between points 64 and 43. In portion (1), light-and-shade patterns were observed near the Kuantan slope and gentle slope waves or sand waves and ripple marks were observed near points 211∿207. Traces by fishing gears were less and not clear. Portion (2) falls near the entrance or exit of the Singapore Strait. Clear sand waves were observed between points 64∿57. These sand waves were 20m∿500m in wavelength and 0.5m∿6m in peak and were asymmetric. (See Figure 3.5.9(f).) The shapes of these sand waves indicate that the current flew from east to west at the time of survey. As the survey approaches the strait, rhythmically arranged ripples of about 1m wavelengths were observed. Near Pos.Nos.48 and 49 something like a wreck of about 10m in size was observed 40m north side of the survey route.

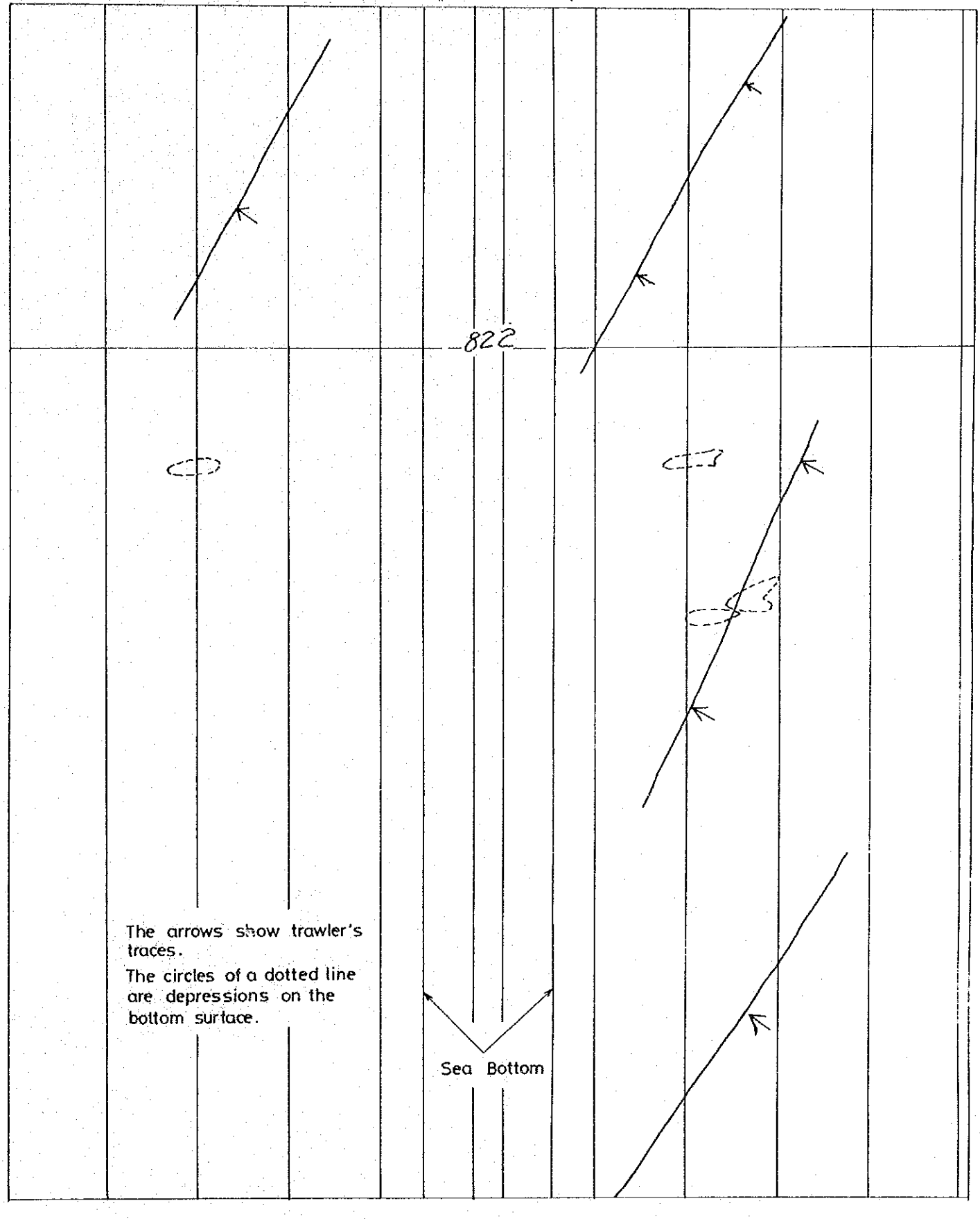
(g) Singapore Strait (Pos. Nos. 43 and 1)

This section is characterized by ups and downs partially developed rhythmical ripples. The bottom feature shown in Figure 3.5.9(g) indicates that base rocks are exposed over the bottom or located near the bottom. These ripples are estimated to have wavelengths of about 1m and heights of about 10cm. In this section, traces ascribable to scratch by fishing gears were less but were comparatively deep and wide.

(h) Katong slope (Pos. No. 1 to landing point)

In this section muddy sand and sandy mud were distributed irregularly as shown in Figure 3.5.10(c).

Position 822 (Lat. 11° 39.11 , Long. 100° 20.18)



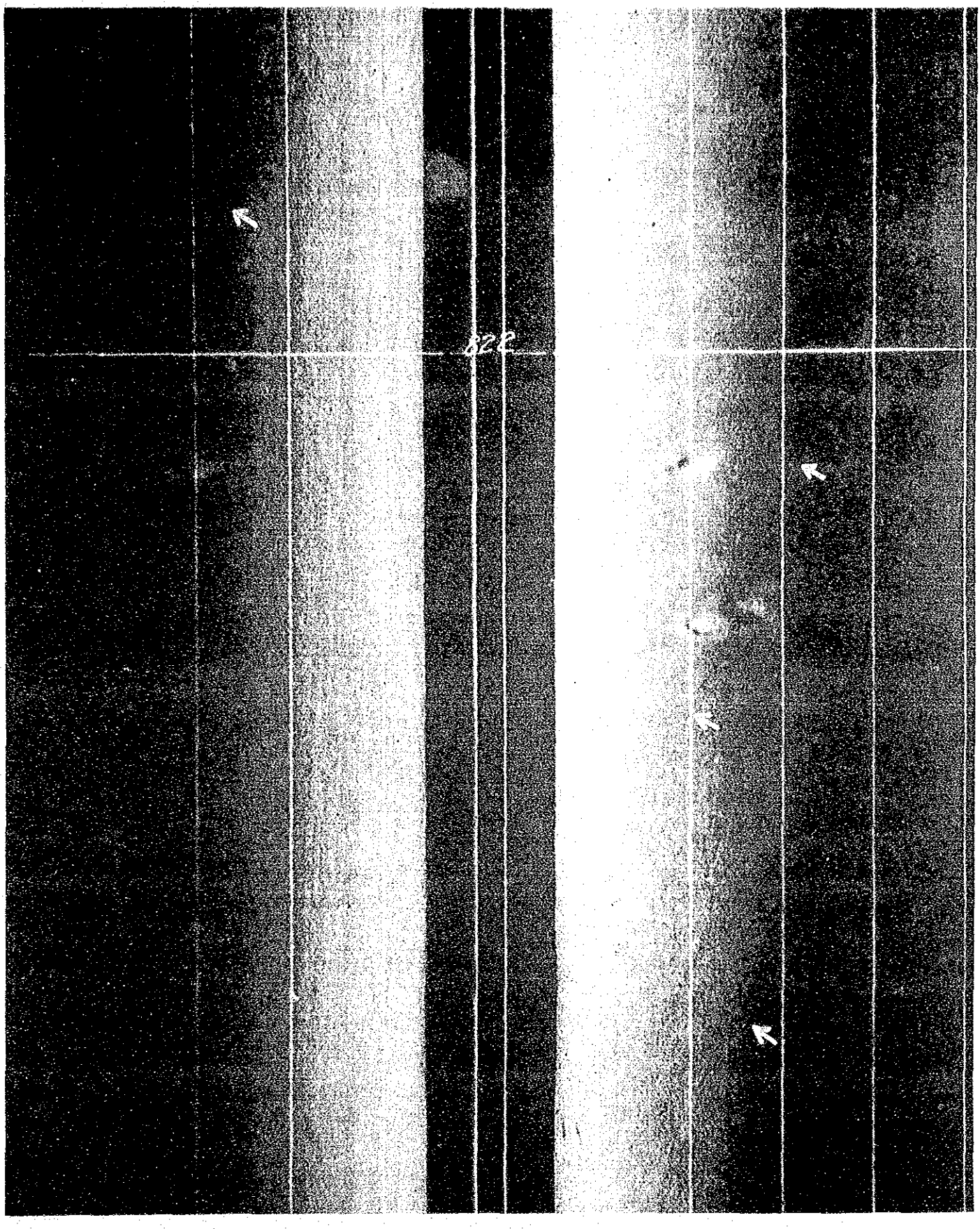
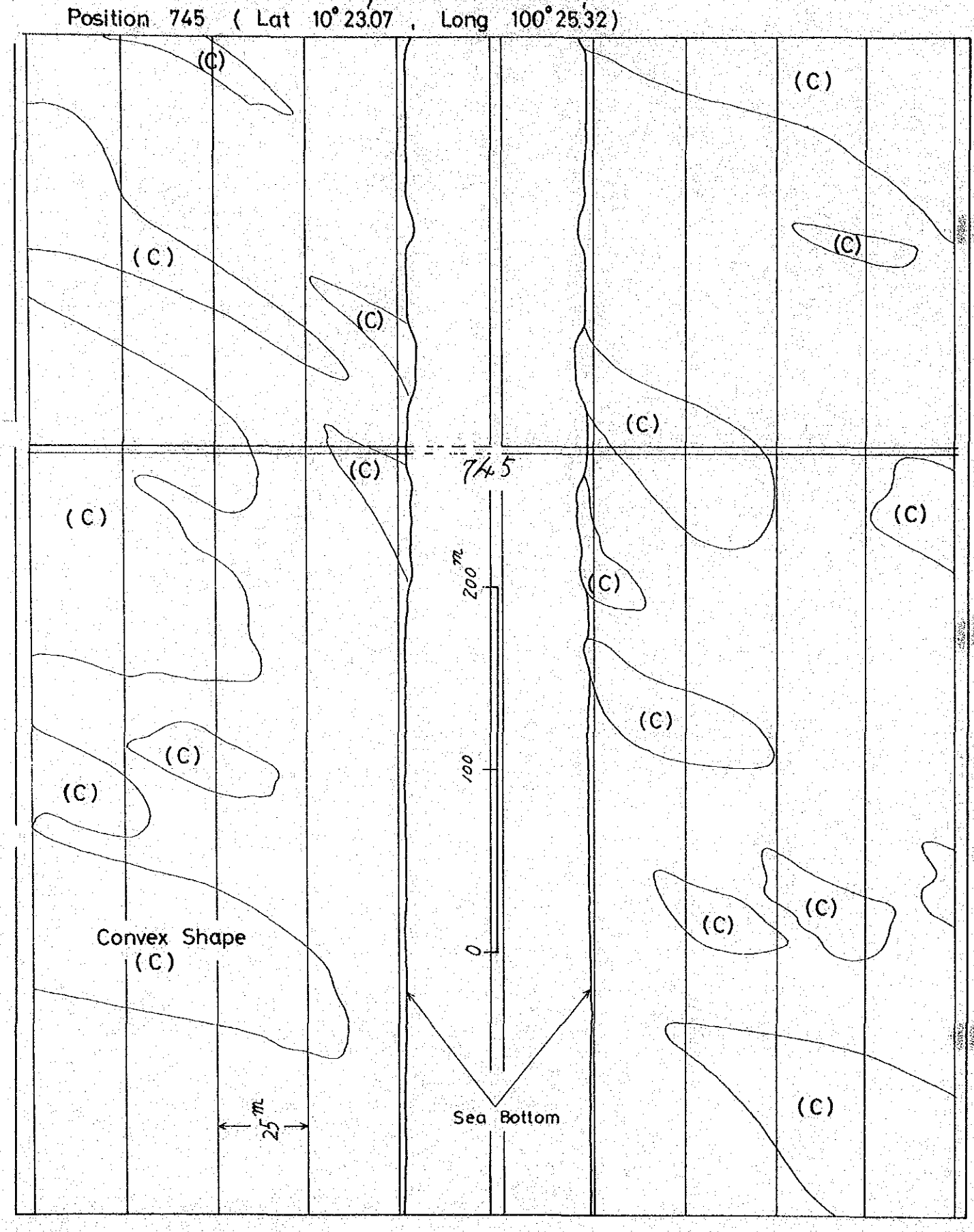


Fig.3.5.9(a) RECORD ON SIDE SCAN SONAR


Position 745 (Lat 10° 23.07 , Long 100° 25.32)
(C)
745
200 m
100
0
Convex Shape
(C)
25 m
Sea Bottom

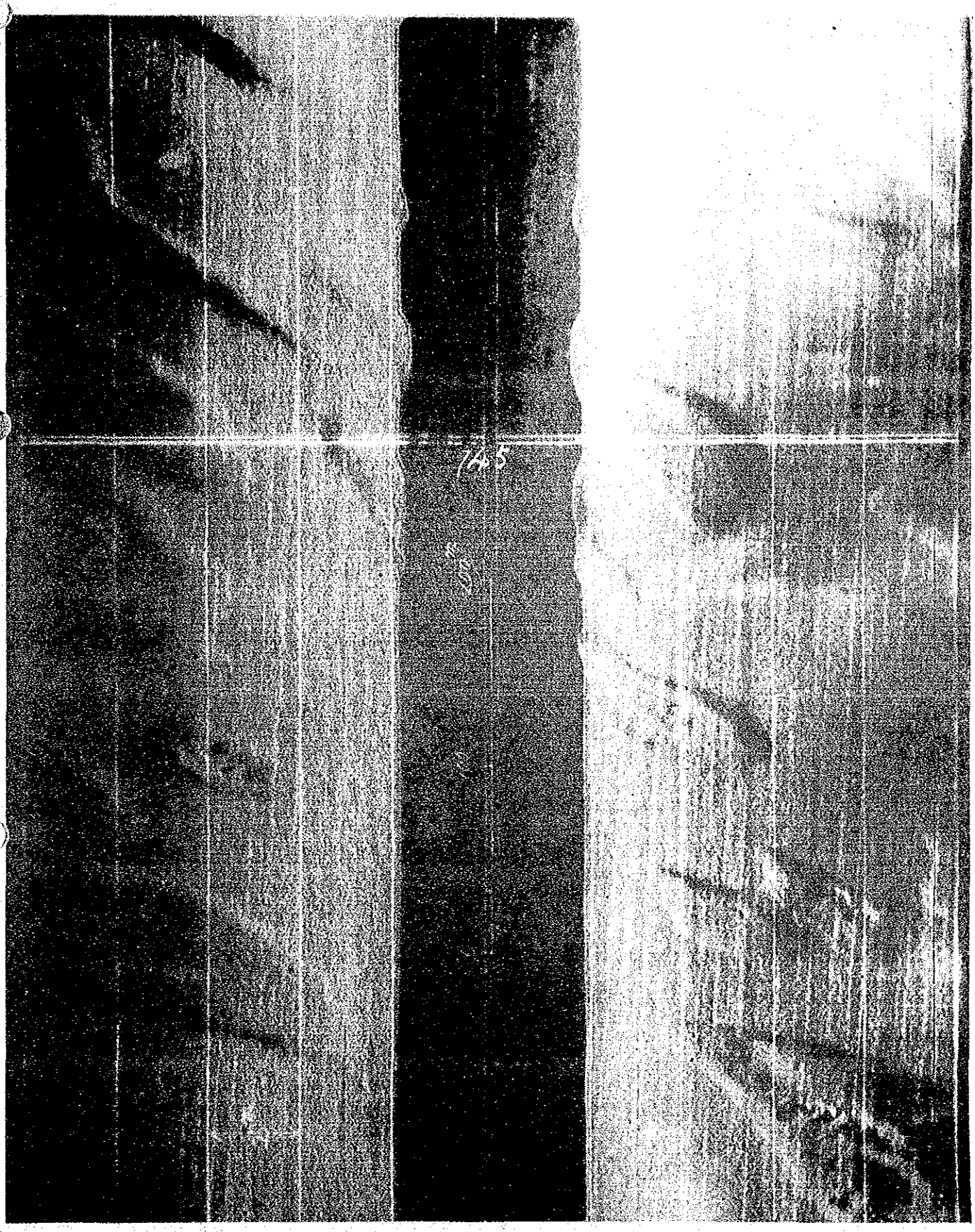
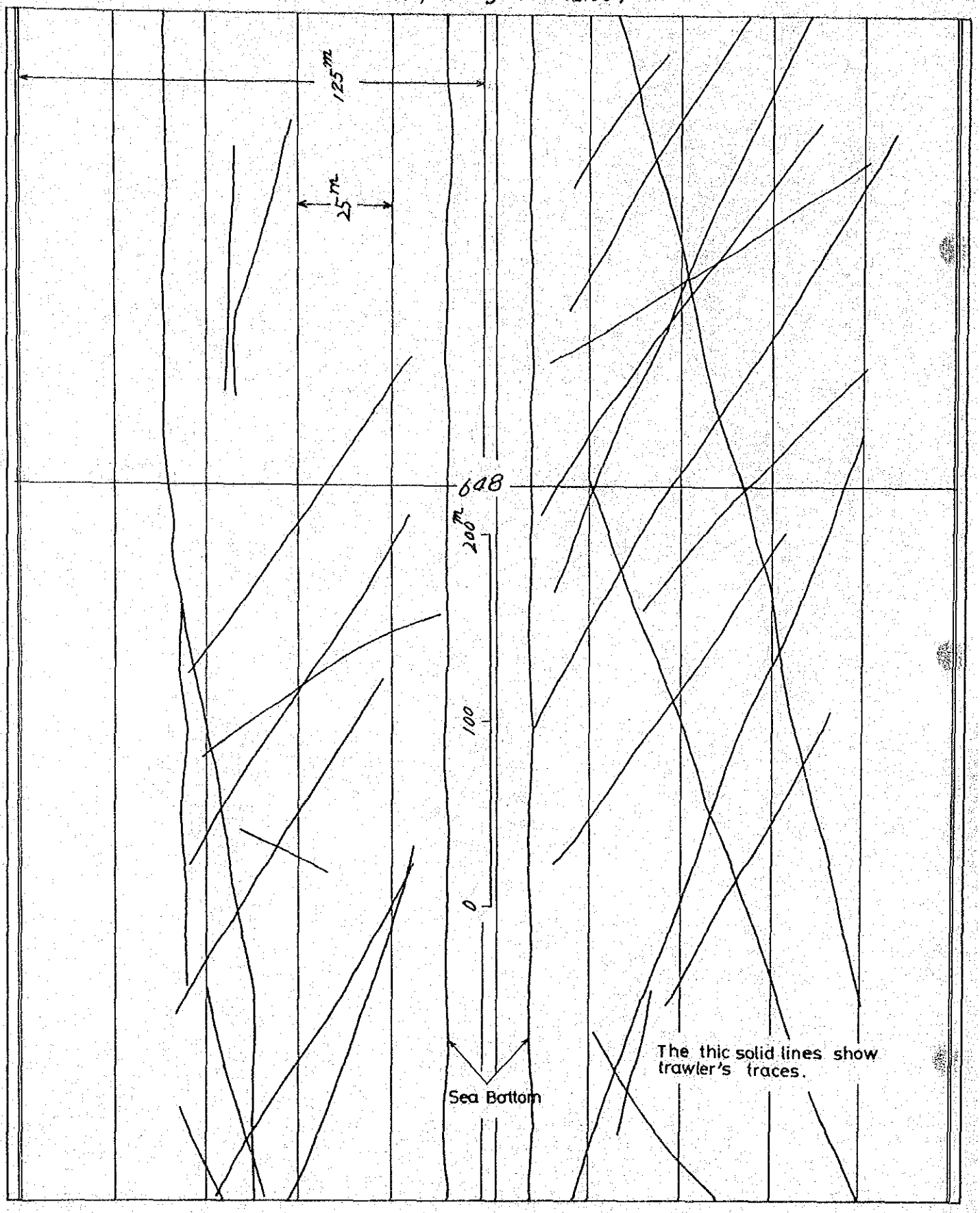


Fig.3.5.9(b) RECORD ON SIDE SCAN SONAR

Position 648 (Lat. 8° 45.48 , Long. 100° 52.00)



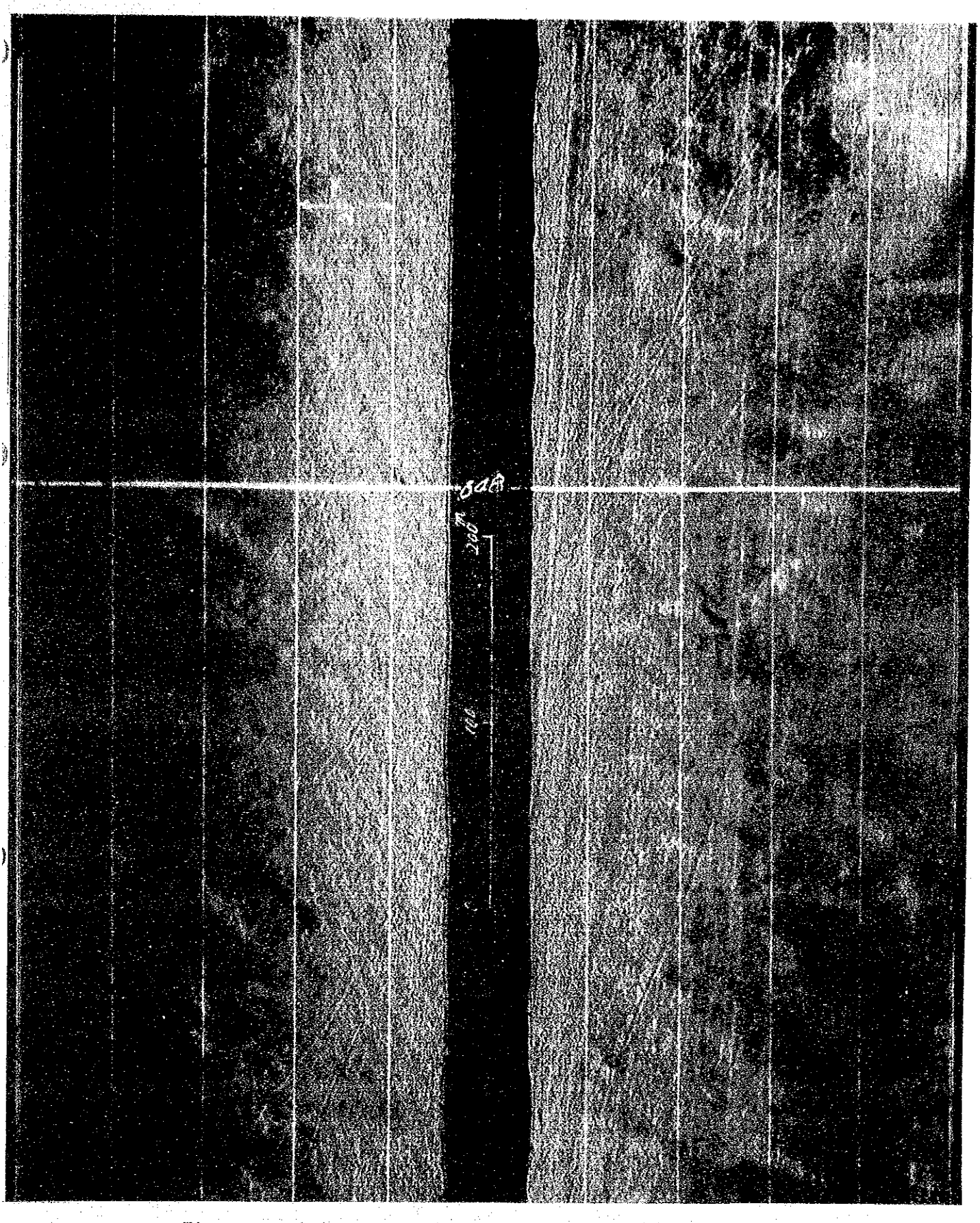
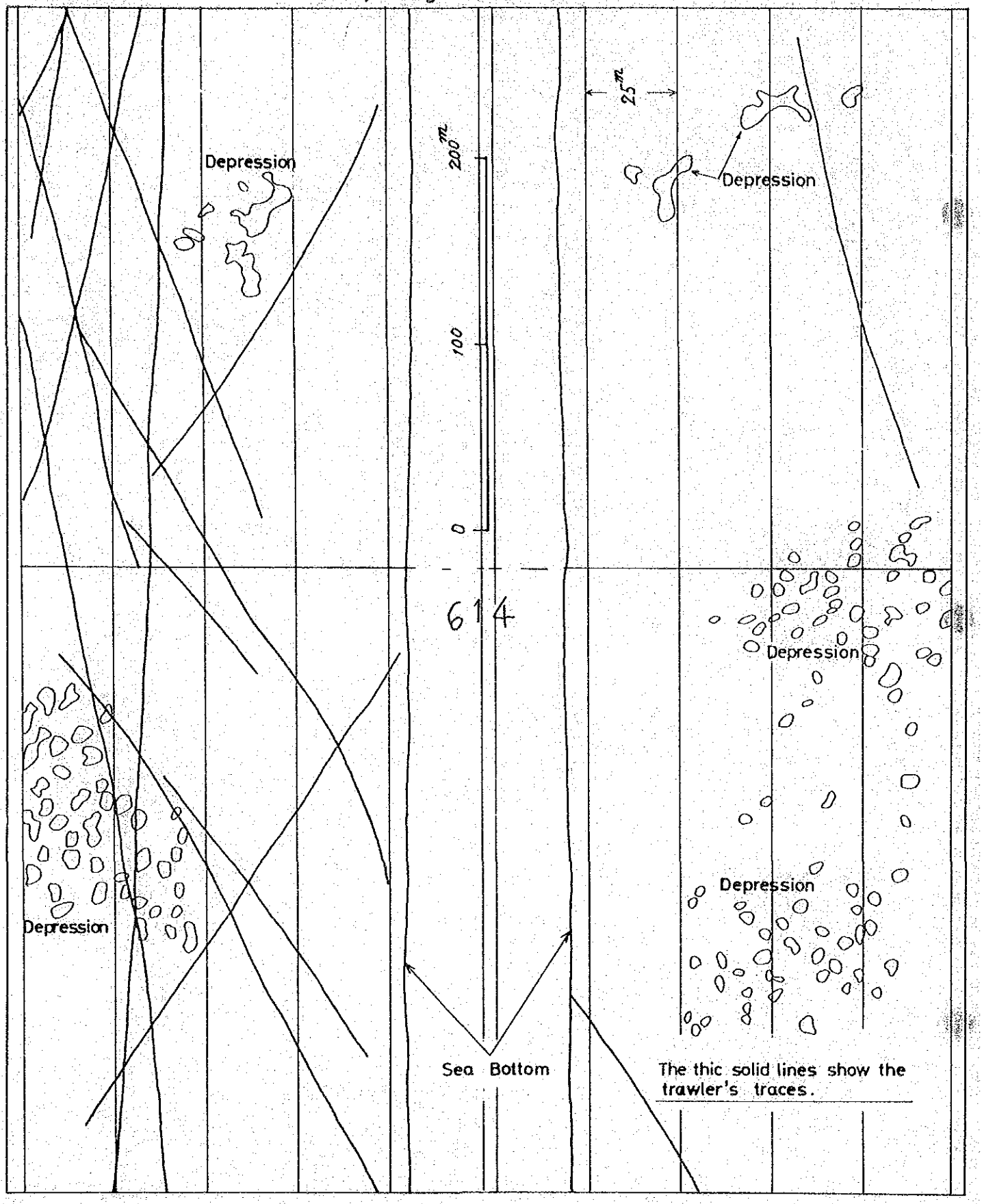


Fig.3.5.9(c) RECORD ON SIDE SCAN SONAR

Position 614 (Lat. 8° 19.87 , Long 101° 10.64)



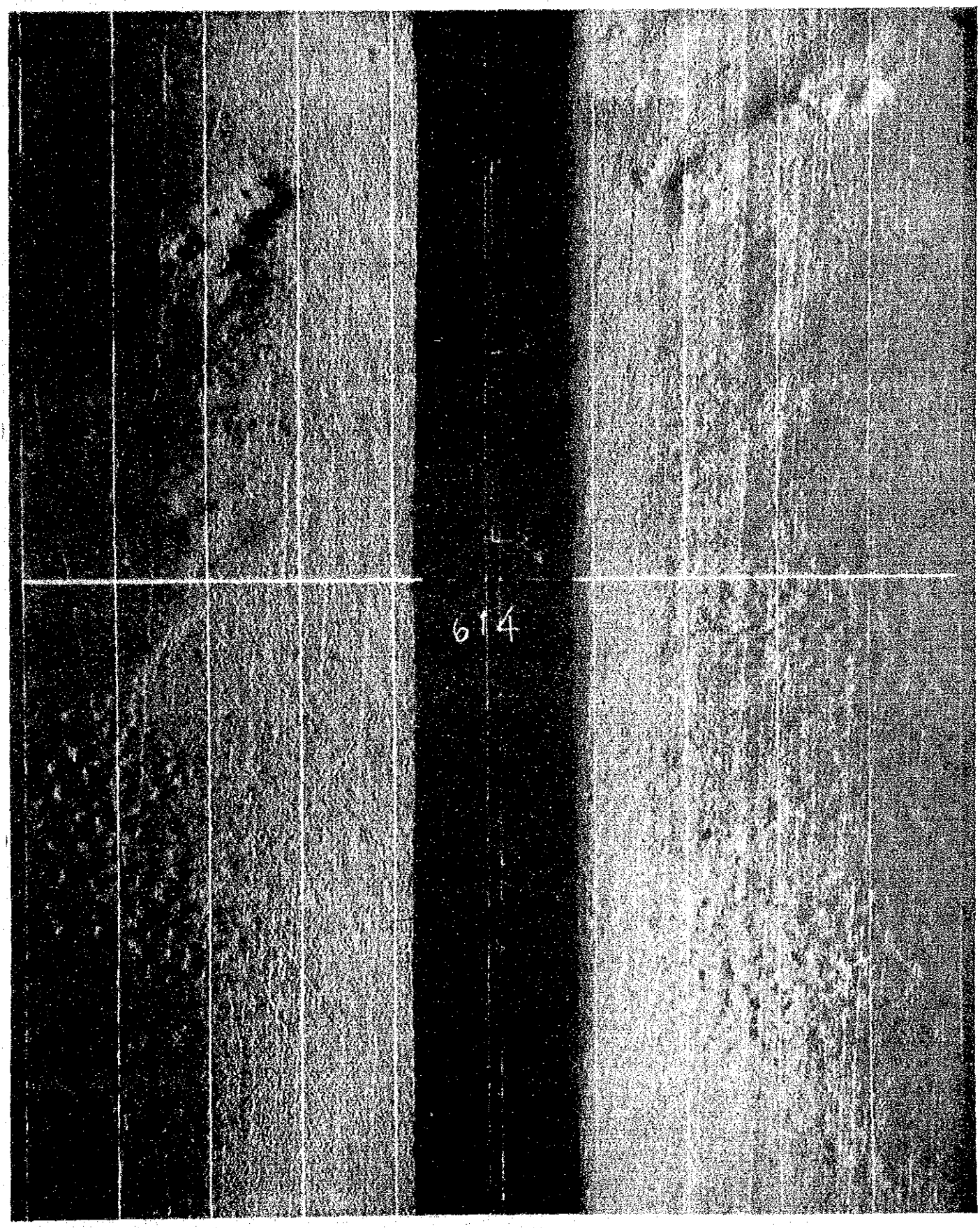
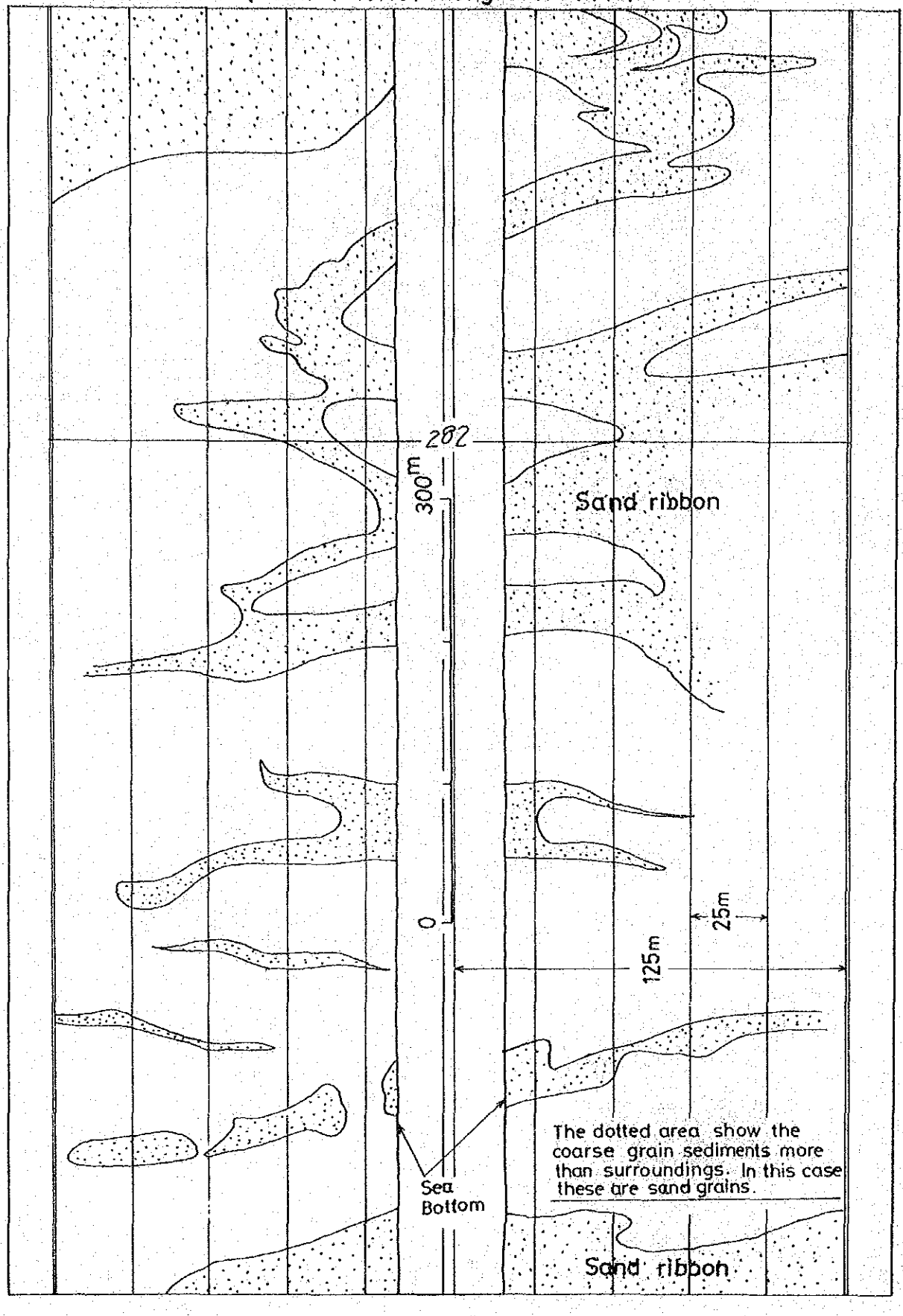


Fig.3.5.9(d) RECORD ON SIDE SCAN SONAR

Position 282 (Lat. 4° 10.38, Long. 103° 34.77)



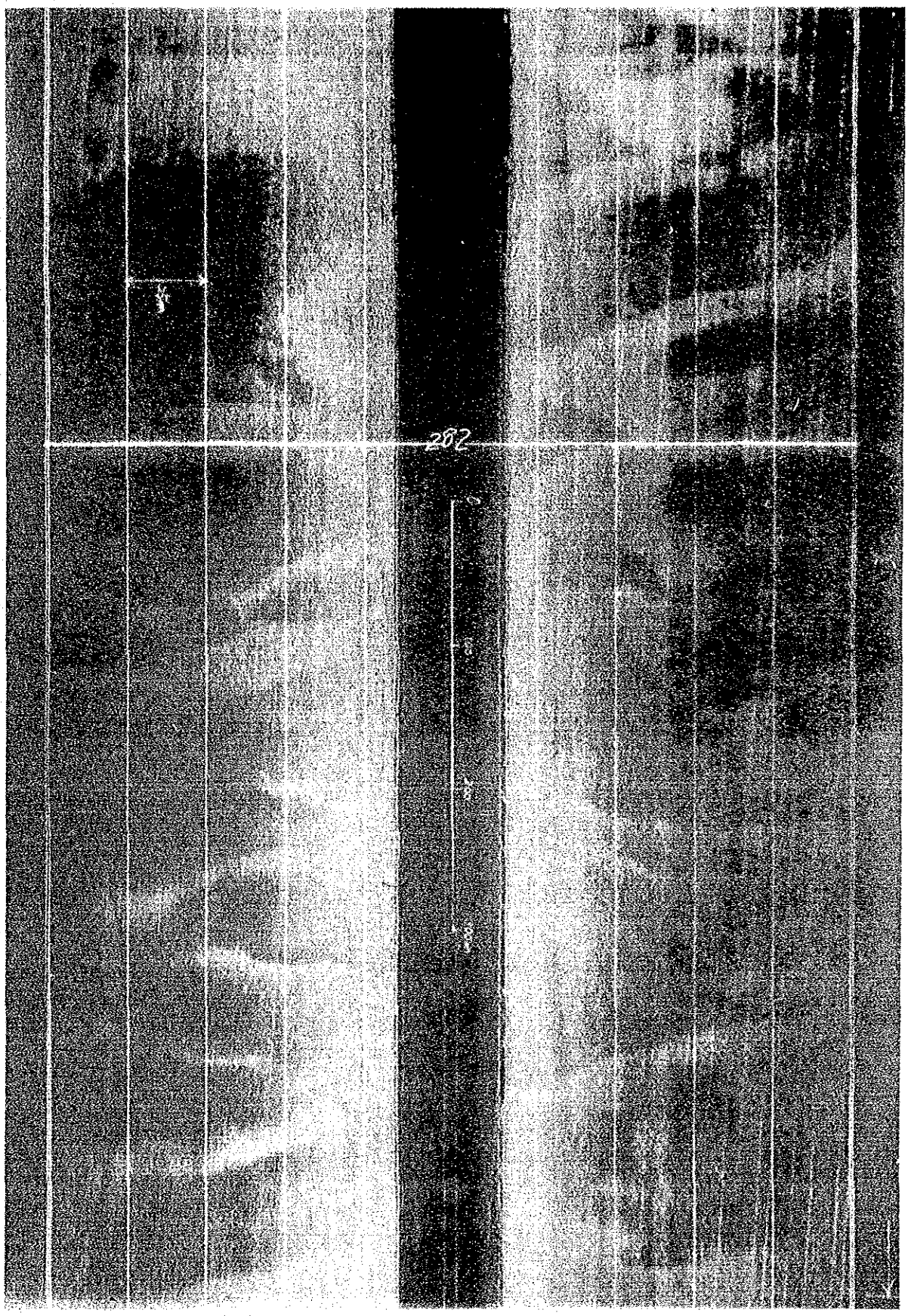
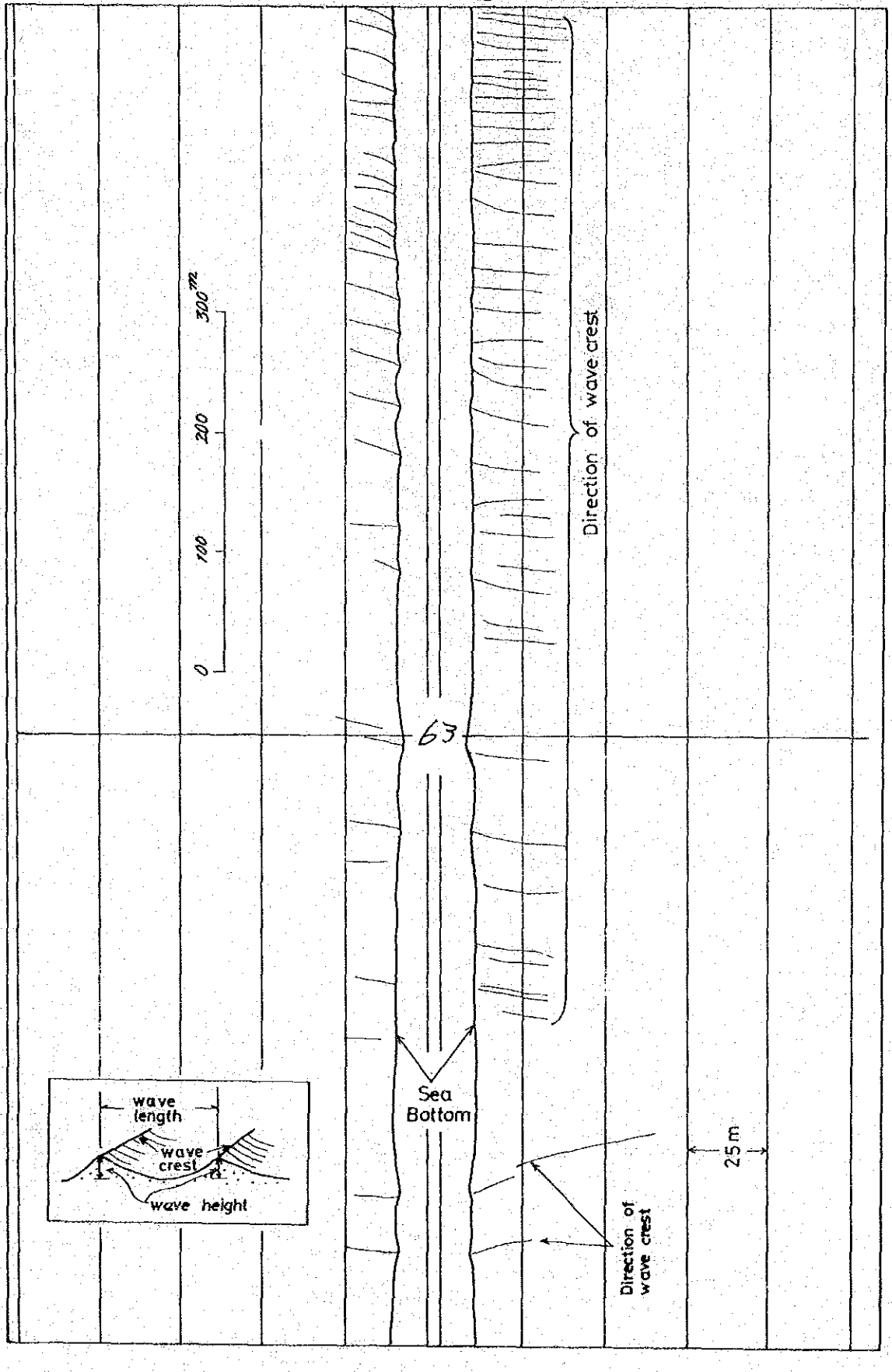


Fig.3.5.9(e) RECORD ON SIDE SCAN SONAR

Position 63 (Lat. 1° 34.60, Long. 104° 29.70)



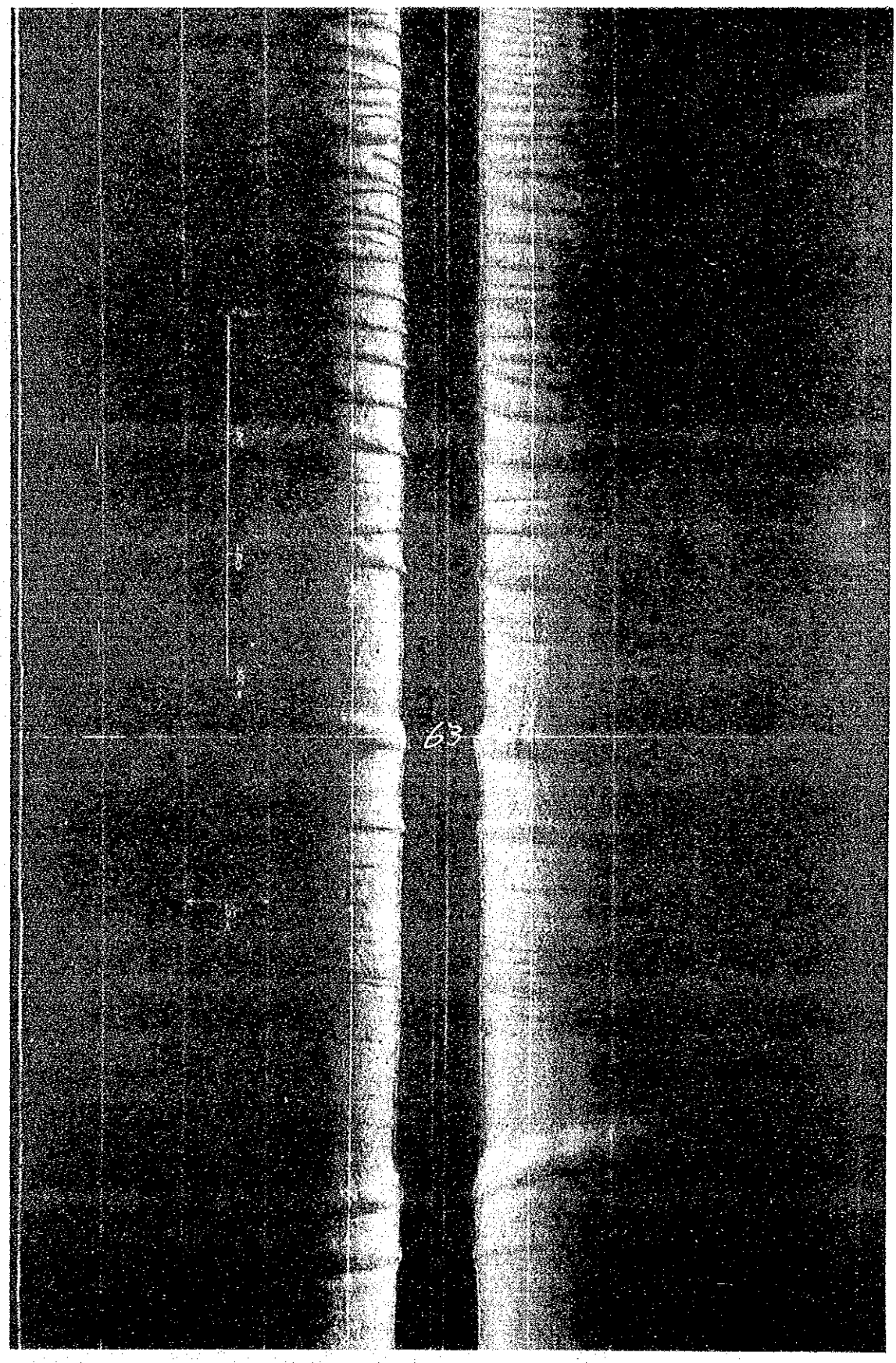
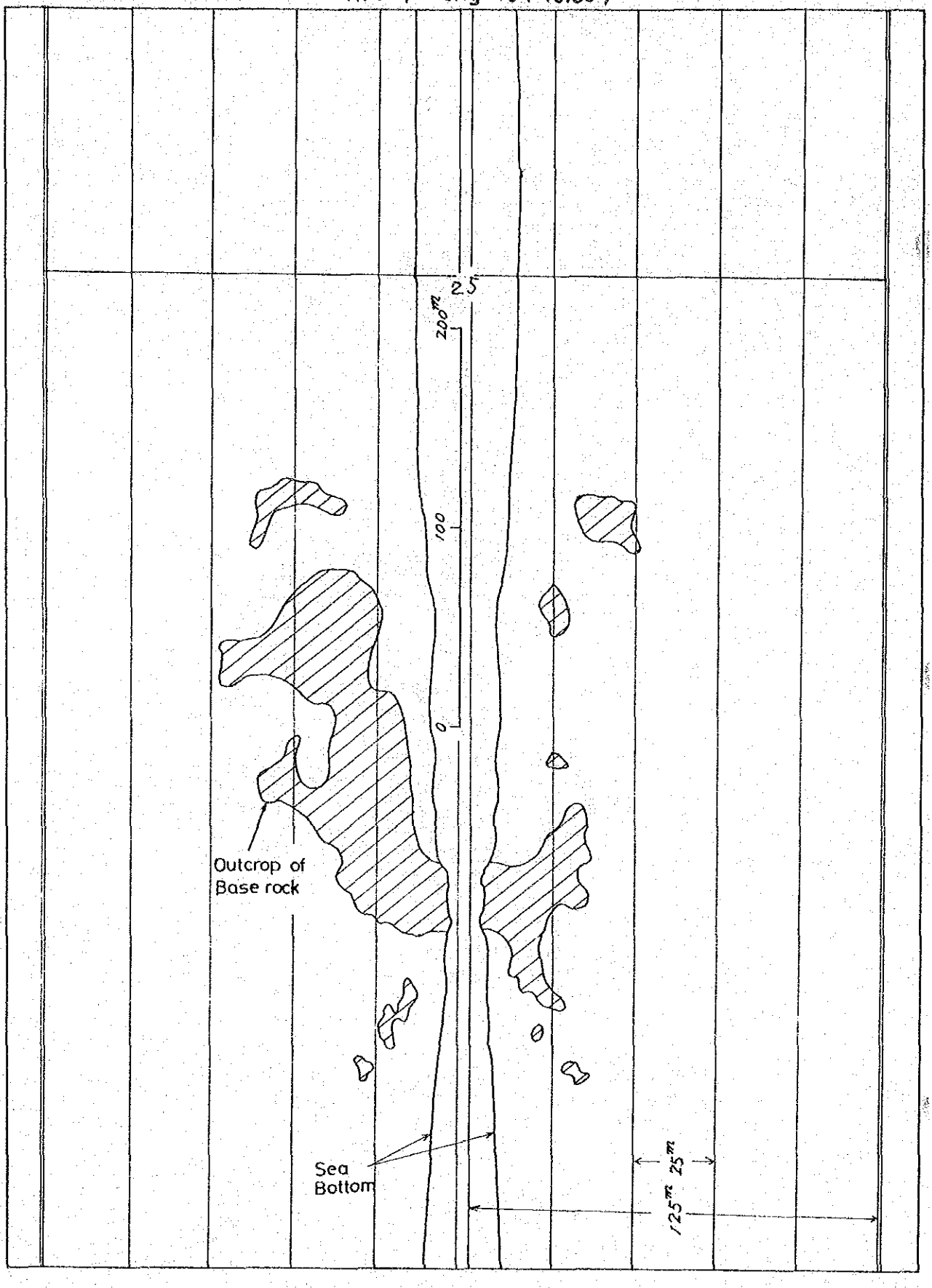


Fig.3.5.9(f) RECORD ON SIDE SCAN SONAR

Position 25 (Lat 1°18.70 , Long 104°10.83)



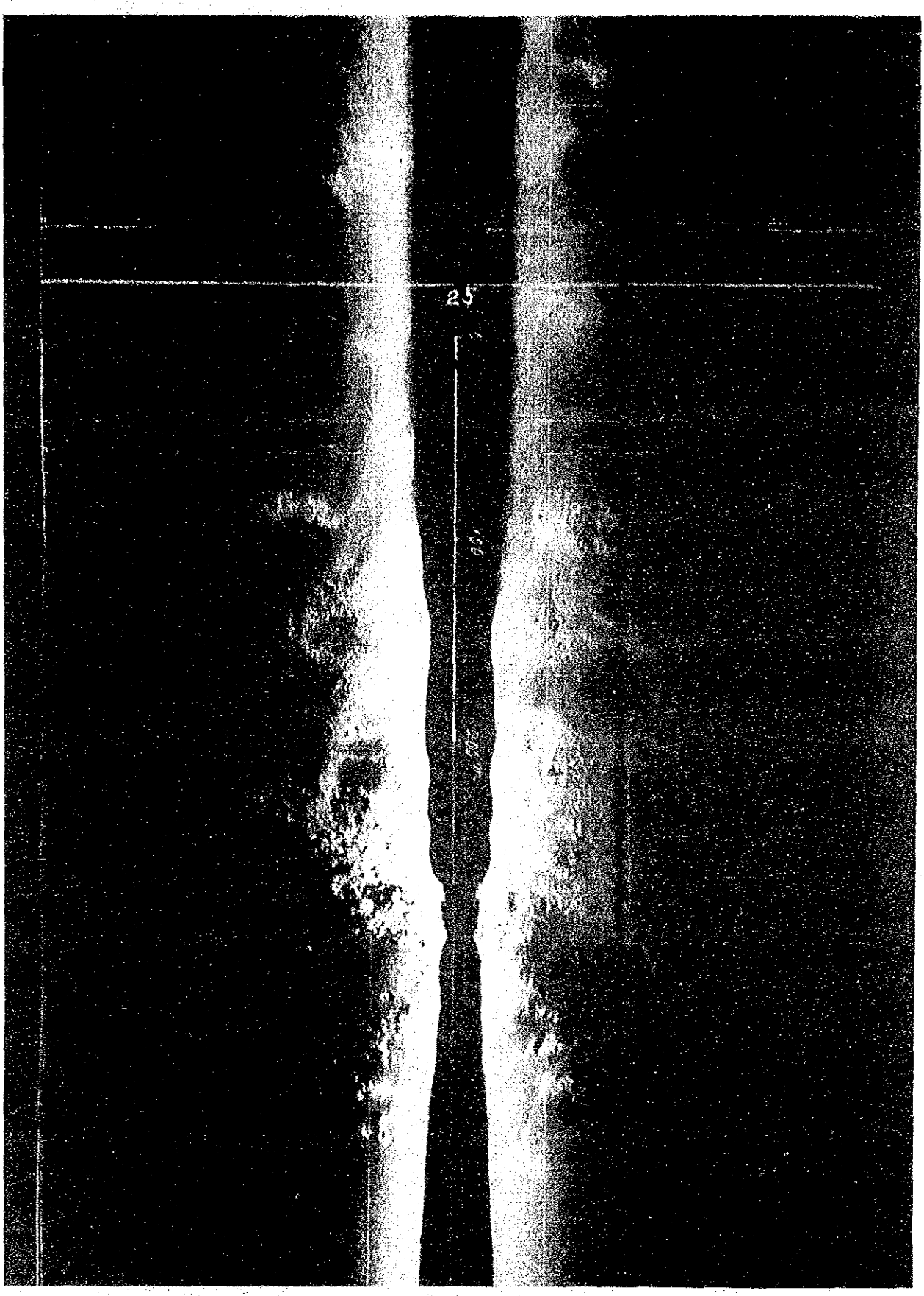
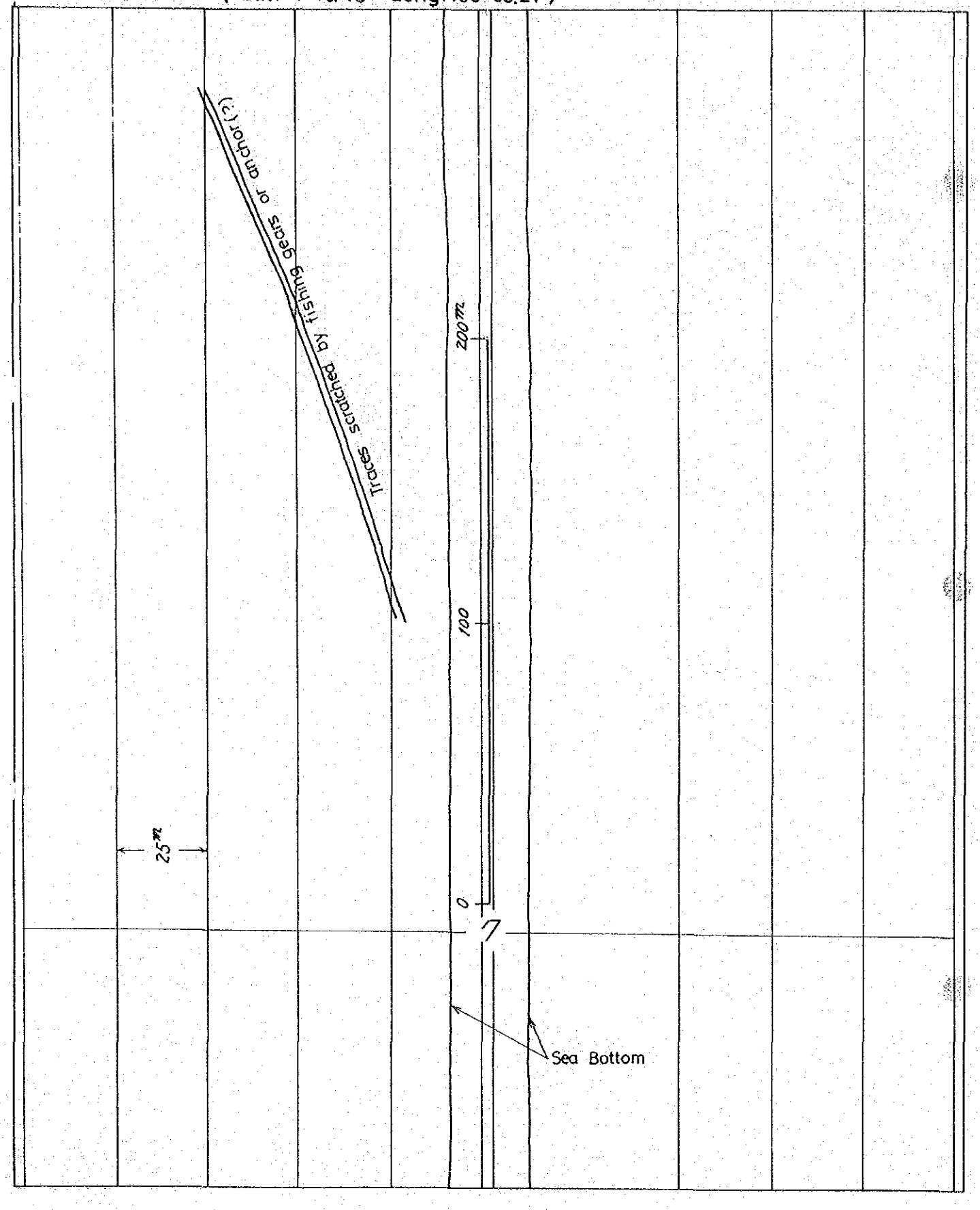


Fig.3.5.9(g) RECORD ON SIDE SCAN SONAR


Position 7 (Lat. 1° 16.40. Long. 103° 58.24)
Traces scratched by fishing gears or anchor(s)
200m
100
0
2.5m
Sea Bottom

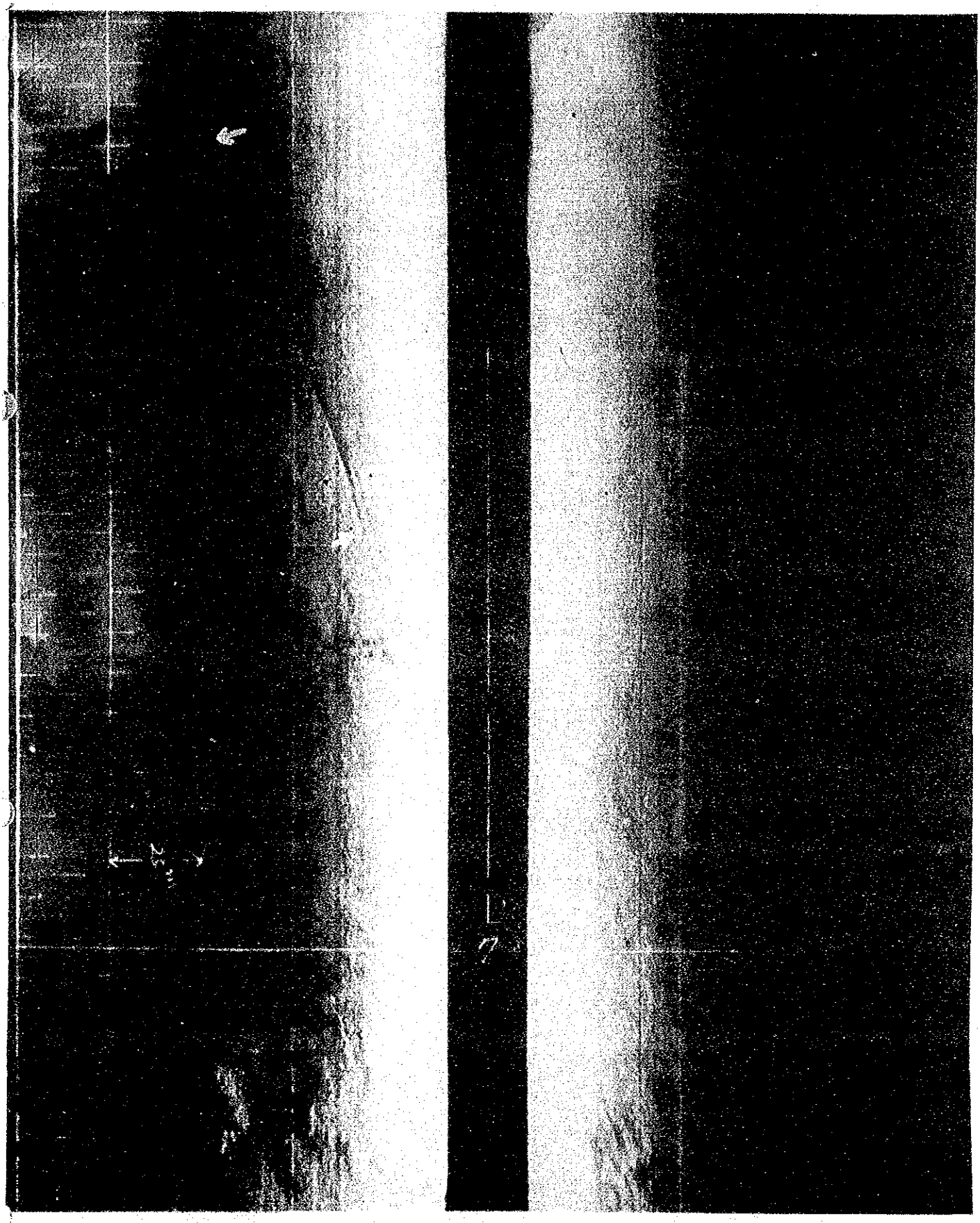


Fig.3.5.9(h) RECORD ON SIDE SCAN SONAR

Fig. 3.5.10(a) BOTTOM SEDIMENTS IN PECHABURI (BAN HAT CHAO SAMRAN) SHORE